

REMARKS

The Final Office Action, which was mailed on November 6, 2002, has been received and reviewed.

Claims 1-40 were previously pending in the above-referenced application. Claims 1-7, 10-14, and 26-40 stand rejected. Claims 8, 9, and 25 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation.

It is proposed that claims 8 and 25 be canceled without prejudice or disclaimer and that the limitations recited therein be incorporated into independent claims 1 and 23, respectively, with the removal of unnecessary elements from claims 1 and 23 also being proposed.

It is also proposed that independent claim 39 be amended.

Reconsideration of the above-referenced application is respectfully requested.

Information Disclosure Statement

Please note that a Supplemental Information Disclosure Statement was filed in the above-referenced application on January 16, 2002, but that no initialed copy of the PTO-1449 has yet been returned to the undersigned attorney. It is respectfully requested that the information cited on the PTO-1449 be considered and made of record in the above-referenced application and that an initialed copy of the PTO-1449 evidencing the same be returned to the undersigned attorney. For the sake of convenience, second copies of the January 16, 2002, Supplemental Information Disclosure Statement, PTO-1449, and USPTO date-stamped postcard are enclosed herewith.

Rejections Under 35 U.S.C. § 102(b)

Buckley

Claims 1, 2, 4-7, 10, 14-18, 20-24, 26-29, 33, 34, and 36-39 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,477,082 to Buckley, III et al. (hereinafter "Buckley").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

It is proposed that claim 1 be amended to include the limitations of claim 8, which the Final Office Action indicates recites allowable subject matter. It is further proposed that claim 1 be amended to remove the recitation of “via laterally discrete, physically unconnected conductive structures,” a limitation that was introduced in the Amendment dated August 26, 2002, but which as not yet resulted in the allowance of claim 1.

As amended independent claim 1 now recites allowable subject matter, it is respectfully requested that the 35 U.S.C. § 102(b) rejection thereof be withdrawn.

Claims 2, 4-7, 10, 14-18, and 20-22 are each allowable, among other reasons, many of which have already been made of record in the above-referenced application, as depending either directly or indirectly from claim 1, which is allowable.

It is also proposed that claim 23 be amended to include the limitations of claim 25, which the Final Office Action indicates to recite allowable subject matter.

As amended independent claim 23 now recites allowable subject matter, it is respectfully requested that the 35 U.S.C. § 102(b) rejection thereof be withdrawn.

Claims 24, 26-29, 33, 34, and 36-38 are each allowable, among other reasons, many of which have already been made of record in the above-referenced application, as depending either directly or indirectly from claim 23, which is allowable.

Independent claim 39, as proposed to be amended herein, recites a method for packaging a semiconductor device assembly which includes, among other things, providing at least a first multi-chip module which includes a first semiconductor die and at least one second semiconductor die. Some of the bond pads of the first semiconductor die are exposed beyond an

outer periphery of the at least one second semiconductor die, an element which is neither expressly nor inherently described in Buckley.

It is further proposed that claim 39 be amended to remove the recitation of “electrically connecting at least some bond pads of said plurality of bond pads of said at least one second semiconductor die with corresponding bond pads of said plurality of bond pads of said first semiconductor die via laterally discrete, mutually disconnected conductive elements,” a limitation which was introduced in the Amendment dated August 26, 2002, but which has not yet resulted in the allowance of claim 39.

In view of the foregoing, it is respectfully submitted that amended independent claim 39 is allowable over Buckley and, accordingly, requested that the 35 U.S.C. § 102(b) rejection of independent claim 39 be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Buckley

Claims 3, 11-13, 30-32, and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Buckley.

Claims 3 and 11-13 are each allowable, among other reasons, as depending either directly or indirectly from claim 1, which is allowable.

Claims 30-32 are each allowable, among other reasons, as depending either directly or indirectly from claim 23, which is allowable.

Claim 40 is allowable, among other reasons, as depending from claim 39, which is allowable.

Buckley in View of Maurinus

Claims 11, 12, 30, and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Buckley in view of U.S. Patent 5,302,778 to Maurinus (hereinafter “Maurinus”).

Claims 11 and 12 are both allowable, among other reasons, as depending indirectly from claim 1, which is allowable.

Claims 30 and 31 are both allowable, among other reasons, as depending indirectly from claim 23, which is allowable.

Buckley in View of Hsuan

Claims 19 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Buckley in view of U.S. Patent 6,239,366 to Hsuan et al. (hereinafter “Hsuan”).

Claim 19 is allowable, among other reasons, as depending indirectly from claim 1, which is allowable.

Claim 35 is allowable, among other reasons, as depending indirectly from claim 23, which is allowable.

Allowable Subject Matter

The indication that claims 8, 9, and 25 recite allowable subject matter is gratefully acknowledged. It is proposed that the limitations of claim 8 be incorporated into independent claim 1 and that the limitations of claim 25 be incorporated into independent claim 23.

ENTRY OF AMENDMENTS

It is respectfully submitted that the amendments that are proposed herein should be entered because they are supported by the as-filed specification and drawings, they do not introduce new matter into the above-referenced application, they do not raise new issues or require a further search, and they place the above-referenced application in condition for allowance. If, for some reason, it is determined that the proposed amendments do not place the above-referenced application in condition for allowance, entry thereof is respectfully requested upon filing of a Notice of Appeal in the above-referenced application.

CONCLUSION

It is respectfully submitted that each of claims 1-7, 9-24, and 26-40 is allowable. An early notice that these claims have been allowed is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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Enclosures: Copies of Information Disclosure Statement, PTO-1449, and date-stamped post card
Version With Markings to Show Changes Made

BGP/djp

Document in ProLaw

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend the claims as follows:

1. (Thrice amended) A method for interconnecting at least two semiconductor dice, comprising:
providing a first semiconductor die including a plurality of bond pads arranged in an array over an active surface thereof;
providing at least one second semiconductor die including a plurality of bond pads on an active surface thereof;
orienting said first semiconductor die and said at least one second semiconductor die with said active surfaces thereof facing each other with said at least one second semiconductor die covering some bond pads of said plurality of bond pads, other bond pads of said plurality of bond pads remaining exposed beyond an outer periphery of said at least one second semiconductor die;
electrically connecting said [at least] some bond pads [of said plurality of bond pads of said at least one second semiconductor die] with corresponding bond pads of said plurality of bond pads of said first semiconductor die[via laterally discrete, physically unconnected conductive structures].

9. (Amended) The method of claim [8] 1, further comprising:
providing a carrier including a plurality of contacts;
orienting said first semiconductor die with said active surface thereof facing said carrier; and
electrically connecting said other bond pads of said first semiconductor die to corresponding contacts of said carrier.

23. (Twice amended) A method for packaging a semiconductor device assembly, comprising:
providing a first semiconductor die including a plurality of bond pads arranged in an array over an active surface thereof;

providing at least one second semiconductor die including a plurality of bond pads arranged on an active surface thereof;

orienting said at least one second semiconductor die over said first semiconductor die with said active surface facing said active surface of said first semiconductor die, said plurality of bond pads of said at least one second semiconductor die in alignment with corresponding bond pads of said first semiconductor die;

electrically connecting at least some bond pads of said plurality of bond pads of said at least one second semiconductor die with corresponding bond pads of said plurality of bond pads of said first semiconductor die via laterally discrete, physically unconnected conductive structures;

electrically connecting bond pads of said first semiconductor die exposed beyond said outer periphery of said at least one second semiconductor die to said corresponding contacts of said carrier;

providing a carrier with a plurality of contacts; and

orienting said first semiconductor die over said carrier with said active surface facing said carrier, bond pads of said first semiconductor die exposed beyond an outer periphery of said at least one second semiconductor die in alignment with corresponding contacts of said carrier.

39. (Twice amended) A method for packaging a semiconductor device assembly, comprising:

providing at least a first multi-chip module including:

a first semiconductor die with a plurality of bond pads arranged in an array over an active surface thereof; and

at least one second semiconductor die including a plurality of bond pads arranged on an active surface thereof, each of said plurality of bond pads of said at least one second semiconductor die in alignment with corresponding bond pads of said first semiconductor die, other bond pads of said first semiconductor die being exposed beyond an outer periphery of said at least one second semiconductor die, said

active surfaces of said first semiconductor die and said at least one second semiconductor die facing one another, and said bond pads of said at least one second semiconductor die electrically connected to said corresponding bond pads of said first semiconductor die, other bond pads of said first semiconductor die exposed laterally beyond an outer periphery of said at least one second semiconductor die;

[electrically connecting at least some bond pads of said plurality of bond pads of said at least one second semiconductor die with corresponding bond pads of said plurality of bond pads of said first semiconductor die via laterally discrete, mutually disconnected conductive elements;]

providing a carrier including contacts; and

orienting said at least said first multi-chip module over said carrier with said active surface of said first semiconductor die facing said carrier and said other bond pads in alignment with corresponding contacts of said carrier.

40. (Twice amended) The method of claim 39, further comprising:
providing at least a second multi-chip module including:

another first semiconductor die with a plurality of bond pads arranged in an array over an active surface thereof; and

an another at least one second semiconductor die including a plurality of bond pads arranged on an active surface thereof, each of said plurality of bond pads of said another at least one second semiconductor die in alignment with corresponding bond pads of said another first semiconductor die, said active surfaces of said another first semiconductor die and said another at least one second semiconductor die facing one another, and said bond pads of said another at least one second semiconductor die electrically connected to said corresponding bond pads of said another first semiconductor die, other bond pads of said another first semiconductor die exposed laterally beyond an outer periphery of said another at least one second semiconductor die; and

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orienting said another at least said second multi-chip module over said carrier with said active surface of said another first semiconductor die facing said carrier and said other bond pads in alignment with corresponding contacts of said carrier.